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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/735,549	12/12/2003	Herbert R. Kolk	200310231-1	3938

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EXAMINER	
DOAN, NGHIA M	

ART UNIT	PAPER NUMBER
2825	

DATE MAILED: 04/05/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/735,549	KOLK ET AL.	
	Examiner	Art Unit	
	Nghia M. Doan	2825	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *03* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *25 January 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-17 and 19-28* is/are pending in the application.

4a) Of the above claim(s) *21-25* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-13 and 26-28* is/are rejected.

7)☒ Claim(s) *14-17,19 and 20* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☒ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. Responsive communication Applicant's Argument filed on 01/25/2006, claims 1-17, 19-20, and 26-28 are pending in this Office Action.

Claims 1, 7, 9, 11, 14, 19, and 26 have been amended.

Claim 18 has been canceled.

Claims 21-25 have been withdrawn from consideration.

2. The new Abstract is approved.

3. Applicant's arguments, filed 01/25/2006, with respect to claims 14-17 and 19-20, Applicant amend independent claim 14 and overcome 35 U.S.C 102 (e) Claims Rejection. Therefore, claims 14-17 and 19-20 are found in allowance condition.

4. Applicant's arguments filed 01/25/2006, with respect to claims 1-13 and 26-28 have been fully considered but they are not persuasive. Therefore, the claim rejection under 35 USC 103(a) is maintained with additional recitations for the amended limitations.

Oath/Declaration

5. The Oath/Declaration is objected to because the inventor name Herbert R. Kolk is missing letter "**e**" in the first name on the Oath/Declaration. Appropriate correction is required.

Claim Objections

6. Claims 1 and 14 are objected to because of the following informalities:

Claim 1, line 3, after "the CPU;" deletes "and".

Claim 1, line 12, after "displaying" deletes ",".

Claim 1, line 14, after "metal layer" change ", " to "; and".

Claim 14, the preamble must state the intended use or purpose of the invention.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. **Claims 1-13 and 26-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lie (US 6,671,868) in view of Dahl (US 6,734,046).**

3. **With respective to claims 1 and 26**, Lie discloses a system (Lie, col. 11, ll. 10-18 and also see first 3 lines in claim 18) comprising a CPU, a graphical user interface couple to CPU and a memory, which may be a storage medium which can be used to program computer to perform a process (col. 11, ll. 25-33) comprising:

the memory stores a bump map application (a pinout table or spreadsheet) (col. 1, ll. 22-31; col. 3, ll. 58-64; col. 11, ll. 25-33 and figures 3-4, 9, 20-21 and 23) and a data extraction application executed by the CPU (col. 1, ll. 35-42 and col. 3, ll. 58-64), wherein the bump map application displays a plurality of editable textual character groups representative of a plurality of bumps, the textual character groups are arranged on the GUI according to a relative coordinate position of the bumps with respect to an origin (figures 3-4, 9, 20-21 and 23; col. 4, ll. 32-36, and ll. 47-60);

wherein the memory also to stores a track definition application executed by the CPU, the track definition application displaying on the GUI, a plurality of editable numeric parameters corresponding to tracks of an integrated circuit metal layer (Lie, col. 1, ll. 12-22, figure 2, col. 3, ll. 55-67 and col. 4, ll. 47-67); and

wherein the data extraction application automatically extracts data from the bump map application and the track definition application for use by a router application(col. 3, ll. 12-20 and ll. 29-51).

Lie discloses a system (see col. 11, ll. 10-32), which can be to perform the process of creating the pinout table readable file (col. 3, ll. 58-64). Official notice is taken that a computer system includes a central processing unit (CPU), a graphical user interface and a memory coupled the CPU.

Lie does not specifically disclose that the system comprises a CPU, GUI coupled to the CPU and a memory coupled to CPU.

Dahl does disclose a computer system (fig. 2, 100; col. 5, ll. 12-20) for generating padring layout (--bump layout--, col. 7, ll. 31-41) design for conjunction package routing (col. 2, ll. 40-52), which is including a central processing unit (CPU) (fig. 2, processor 101); a graphical user interface coupled to the CPU (fig. 2, element 106 and 105 – alpha-numeric and display device); and a memory coupled to the CPU (fig. 2, elements103-104).

It would have been obvious to one of ordinary skill in the art to combine the Lie and Dahl references used in generating bump map application as Dahl discloses the detail elements common to a computer system for implementing a computer system

and product performing a process of extracting bump (pad, pinout or ball) in to the data structure for a routing application, that benefit of reducing the change of human error by using automate reformatted information for different purposes (Lie, col. 11, ll. 34-42) and handling such of custom layout or exceptions in the patterns by using editor and graphical user interface (GUI) (Dahl, col. 2, ll. 40-52).

4. **With respect to claims 2-5**, Lie and Dahl disclose the computer product, which is including the computer system in the claim 1 as rejection 35 USC 103(a) above, further comprising:

(claim 4-5) the pinout map table (bump map application) displays plurality cells (Lie, figures 3-4 and the descriptions); (claim 5) each cell comprises information regarding a two-dimensional space (--table, which has columns and rows--) (Lie, figures 3-4 and the descriptions); and (claims 2-4) each cell is adapted to contain a textual character group (Lie, figures 3-4 and the descriptions);

(claims 2-3) Lie also discloses computer product for generating and editing the information such the textual character groups by using the programming script such as perl (Lie, col. 34-46).

5. **With respect to claim 6**, Lie and Dahl discloses the computer product in the set of forth claims of generating the pinout map table, which contain plurality cells, wherein each cell is shaded in one of a plurality of colors, wherein each color signifies information to a user (Lie, col. 4, ll. 12-18).

6. **With respective to claims 7-12**, Lie and Dahl disclose all the limitations of the set for the claims, further comprising:

(claim 7) Lie discloses wherein the track definition application display on GUI one or more set of intersecting columns and rows containing editable information that describes track of an integrated circuit (Lie, col. 3, ll. 58-67 and col. 4, ll. 1-47; figures 3-4; and col. 4, ll. 47-67).

(claim 8) Lie discloses the bump map application (Lie, figures 9 and 20, col. 7, ll. 8-23 and col. 10, ll. 10-20 – mapping information for display bump/pinout location) and track definition application (Lie, figures 3-4, col. 4) are a single application that uses a single source file

(claim 9) Lie discloses the data extraction application extracts track-related data from the track definition application and organizes the track-related data for use by the router application (Lie, col. 3, ll. 29-51; ll. 58-67; col. 4, ll. 47-65 and col. 10, ll. 10-39).

(claim 10) wherein at least one of the sets of intersecting columns and rows display information consisting of: a name associated with a set of intersecting columns and rows (Lie, figure 3, col. 4, ll. 47-65).

(claim 11) wherein at least one of the sets of intersecting columns and rows comprises a macro definition, wherein a plurality of track parameters contained in the macro definition are automatically entered using a predetermined macro label (Lie, figures 3-4, 6-7; and col. 5, ll. 60-67 and col. 6 ll. 1-51, figure 21,) .

(claim 12) wherein at least one of the sets of intersecting columns and rows contains a name associated with the macro definition and coordinates defining a two-dimensional region, wherein track parameters associated with the macro are used by a

router application to layout tracks in the two-dimensional region (Lie, figures 21-22; and col.10, ll. 20-67).

7. **With respective to claim 13**, Lie and Dahl disclose all the limitations of the claim 1, wherein the origin (-- the coordinate could have the origin --) is associated with an integrated circuit region (Lie, col. 3, ll. 58-64, col. 4, ll. 32-35 and col. 9, ll. 34-49).

8. With respect to claim 26,

9. **With respect to claims 27-28**, Lie and Dahl disclose all the limitations of claim 26, further comprising:

(claims 27) Lie does disclose the system wherein the computer readable instructions when executed by the CPU further provide means for condensing (--table--) editable metal layer information viewable to a use (Lie, figures 3-4).

(claims 28) Lie does disclose the system wherein the computer readable instructions when executed by the CPU further provide means for extracting (--reading --) the condensed editable metal layer information for use by a router application (Lie, col. 4, ll. 1-36).

Allowable Subject Matter

10. Claims 14-17 and 19-20 would be allowable if rewritten or amended to overcome the Claim Objection, set forth in this Office action.

11. The following is a statement of reasons for the indication of allowable subject matter: taking claim 14 as exemplary, the prior art made of record does not teach or fairly suggest the method comprising the inventive step of creating a data structure; extracting bump locations into the data structure from relative physical positions of

bump labels in a table, wherein each bump label is associated with a bump; determining if a macro defining a plurality of tracks exists; if a macro defining .a plurality of tracks exists, extracting track parameters into the data structure based on the macro; and if a macro defining a plurality of tracks does not exist, extracting track parameters into the data structure based on individual track definitions.

Response to Arguments

12. Applicant's arguments filed 01/25/2006, with respect to claims 1-13 and 26-28 have been fully considered but they are not persuasive.

13. Applicant states "Lie does not display a plurality of editable numeric parameter corresponding to tracks of an integrated circuit metal layer".

Examiner respectfully disagreed as the following reason:

14. Lie teaches the step filling a number of columns and rows (tracks) of a computer readable file that showed (displayed) die pad, pad name, pad location (coordinated) and color can be changeable (editable) in definition process (at least suggest as figure 2, col. 3, ll. 55-67 and col. 4, ll. 47-67, and col. 6, ll. 28-38).

15. Applicant states "Lie does not automatic extracted ... for use by a router".

Examiner respectfully disagreed as the following reason:

16. Lie at least suggest that performing all or portion of the tasks involved in pinout (bump map) generating and a method that may allow the pinout (bump map) generation to be automated less prone to human error, and /or more efficient (col. 1, ll. 12-22, col. 3, ll. 23-27). And Lie also suggest that the steps to generate the table (tracks) in figure 2

(see the description), which is used to improve routing (router application) (col. 3, ll. 37-42, col. 7, ll. 45-53, and col. 9, ll. 24-27).

17. The reasons above are read on the claim limitations. Therefore, the rejection with respect to claim 1-13 and 26-28 is maintained.

Conclusion

18. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nghia M. Doan whose telephone number is 571-272-5973. The examiner can normally be reached on 8:30-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jack Chiang can be reached on 571-272-7483. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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